

REMARKS

Claims 1-3 are pending in the present application. Claims 4-20 have been cancelled without prejudice or disclaimer to the subject matter contained therein. The Applicant reserves the right to file a divisional application directed to the subject matter contained in cancelled claims 5-20.

Rejection under 35 U.S.C. §103 over Asakawa

Claims 1-4 have been rejected under 35 U.S.C. §103 as being unpatentable over Asakawa (US Patent 6,604,804). This rejection under 35 U.S.C. §103 to claims 1-4 is respectfully traversed.

In formulating the rejection under 35 U.S.C. §103, the Examiner alleges that Asakawa discloses receiving input electronic data of an image intended to be printed (Figure 5 of Asakawa); inspecting the data to determine both the lead edge and the trail edge blank borders of the image (column 4, lines 53-55 and column 8, lines 22-29 of Asakawa); and determining whether the blank borders exceed a minimum design distance and adjust imaging and paper delivery timing accordingly to increase subsequent printing speed (column 8, lines 1-29; column 7, lines 38-51; and column 5, lines 20-44 of Asakawa).

However, the Examiner recognizes that Asakawa fails to disclose a determination of whether the blank borders exceed a predetermined distance. To meet this deficiency in the teachings of Asakawa, the Examiner argues, "While [Asakawa] does not explicitly disclose that blank borders exceed a minimum design distance, the calculation of such information is possible."

Based upon these allegations, the Examiner concludes that Asakawa renders the presently claimed invention obvious to one of ordinary skill in the art. These allegations and conclusion are respectfully traversed.

Independent claim 1

As set forth above, amended independent claim 1 recites a method for minimizing the Inter-Document Zone in multi-pass printing system architectures with print engines employing asynchronous paper delivery and providing control over paper feed and imaging times.

The claimed method receives input electronic data of an image intended to be printed on a recording medium; inspects the electronic data to determine a lead edge blank border of said image, the lead edge blank border being a portion of the electronic data of the image corresponding to an area located at a leading edge of the recording medium onto which no marking material is to be deposited, the lead edge blank border having a first dimension parallel to a direction the recording medium is being transported and a second dimension perpendicular to a direction the recording medium is being transported; determines, on a page by page basis, whether a length of the lead edge blank border, in the first dimension, exceeds a predetermined distance; and adjusts, on a page by page basis, imaging and paper delivery timing accordingly to increase subsequent printing speed when length of the lead edge blank border, in the first dimension, exceeds a predetermined distance.

As previously submitted, the Examiner recognizes that Asakawa fails to disclose a determination of whether the leading edge blank border exceeds a minimum design distance. To overcome this deficiency in the teachings of Asakawa, the Examiner asserts that the deficiency is moot because such calculations are possible.

More specifically, the Examiner appears to hold forth that when a reference is silent to the claimed parameter/calculation, but the calculation is possible (the realization that this calculation is possible is solely based upon the Applicant's disclosure [hindsight by the Examiner]), one of ordinary skill in the art would be motivated by the knowledge that such a calculation is possible to use such a calculation in lieu of the calculation taught by the prior art. This position by the Examiner is arbitrary and capricious.

A determination cannot be declared obvious because the Examiner asserts that the determination is possible. Many determinations are possible, but the mere possibility that a determination may exist does not render the determination obvious. Moreover, assuming that the mere possibility that a determination may exist is a proper criterion, must the possibility be more likely than not, clear and convincing, 80% possible, 99.99% possible, etc.? In other words, what is the threshold to convert a possibility into a finding of obviousness?

Thus, the Examiner has failed to establish a prima facie case with respect to obviousness under 35 U.S.C. §103.

However, notwithstanding the Examiner's failure to establish a prima facie case with respect to obviousness under 35 U.S.C. §103, the teachings of Asakawa fail to render the presently claimed invention obvious to one of ordinary skill in the art.

Asakawa teaches, at column 8, lines 1-29, the determination of the remainder data (R) based upon the gap (G) between two documents, the partial data left in the swath buffer (Pd), and the swath height (S) of the printer head. The determined remainder data (R) provides information to the printing system with respect to how much of the lower portion of a printer head can be utilized to print the next page. Asakawa teaches that the determination of remainder data (R) enables the more efficient printing results.

The Examiner asserts that Asakawa teaches, at column 8, lines 22-29, a determination of a gap which includes margins. The Examiner has utilized this passage of Asakawa in a manner that is inconsistent with the context of Asakawa.

More specifically, Asakawa teaches, at column 8, lines 22-29, that the "valuation" of G may include "margin offsets into the printing area of each page." Moreover, Asakawa teaches, at column 8, lines 1 & 2, that G is defined as the "blank image/GAP between end of one page and the beginning of next."

Thus, Asakawa teaches that G may be the "blank image/GAP between end of one page and the beginning of next," or the "blank image/GAP between end of one page and the beginning of next" plus a margin value. Based upon this value G, Asakawa teaches that the remainder data (the data corresponding to the top portion of the next page) can be calculated so that the swath buffer can be loaded with the appropriate data.

Asakawa teaches that the determination of G is a straight forward measurement and based upon a comparison of G with the size of the swath buffer, the swath buffer is loaded a particular way. In other words, Asakawa teaches that the swath buffer is loaded based upon a difference between G, the size of the swath buffer, and the amount of data from a current page wherein the gap measurement G, includes at least two components: the blank image and the physical gap between recording documents.

In contrast, the claimed invention inspects the data to determine **a lead edge blank border** of the image. Moreover, the claimed invention defines the lead edge blank border as being **a portion of the electronic data of the image corresponding to an area located at a leading edge of the recording medium onto which no marking material is to be deposited**. Furthermore, the claimed invention defines the lead edge blank border as having a first dimension parallel to a direction the recording medium is being transported and a second dimension perpendicular to a direction the recording medium is being transported.

As set forth by independent claim 1, the claimed invention, on a page by page basis, determines whether a length of **the lead edge blank border**, in the first dimension, exceeds a predetermined distance; and adjusts, on a page by page basis, imaging and paper delivery timing accordingly to increase subsequent printing speed when length of the lead edge blank border, in the first dimension, exceeds a predetermined distance.

In other words, the adjustment of the presently claimed invention is based upon a comparison between a value consisting of a specific parameter and a predetermined value whereas Asakawa teaches that the swath buffer is loaded based upon two parameters, the blank image and the inter-document gap.

Assuming, for the sake of argument, that the lead edge blank border corresponds to the blank image taught by Asakawa, the determination of G, as taught by Asakawa, is the combined value of the blank image value and the inter-document gap value. Thus, if the combined value meets some threshold, Asakawa teaches that the swath buffer is loaded accordingly.

On the other hand, if the blank image value exceeds some predetermined value, Asakawa fails to teach that this situation, in of itself, triggers the loading of the swath buffer is loaded in a different manner because it is the combination of the blank image value and the inter-document gap value.

Thus, Asakawa fails to teach the determination, on a page by page basis, of whether a length of **the lead edge blank border**, in the first dimension, exceeds a predetermined distance; and adjusting, on a page by page basis, imaging and paper delivery timing accordingly to increase subsequent printing speed when length of the lead edge blank border, in the first dimension, exceeds a predetermined distance

Putting another way, again assuming for the sake of argument, that the blank image taught by Asakawa corresponds to the claimed lead edge blank border, Asakawa teaches that the swath buffer is loaded accordingly to $B + D$ wherein B is the blank image and D is the inter-document gap.

In contrast, the presently claimed invention sets forth the adjusting, on a page by page basis, imaging and paper delivery timing when $B > X$ wherein B is the length of the lead edge blank border, in the first dimension, and X is the predetermined distance.

In this scenario, the system as taught by Asakawa fails to teach that B (the blank image or claimed length of the lead edge blank border, in the first dimension) triggers any adjust, but that the combined values the blank image and the inter-document gap. In other words, the blank image may exceed the claimed threshold, but that situation, as taught by Asakawa, would not trigger any adjustments because the adjustment must also take into consideration the inter-document gap.

Furthermore, as previously submitted, the teachings of Asakawa are not concern with inter-document zone management. Moreover, Asakawa fails to disclose or suggest determining the length of the lead edge blank border of a page because Asakawa is not concern with inter-document zone management, but minimizing the number of swaths a printer head takes to print multi-pages.

Lastly, the presently claimed invention sets forth that both the image and paper timing are adjusted when length of the lead edge blank border, in the first dimension, exceeds a predetermined distance.

In contrast, Asakawa teaches that the loading of the swath buffer is adjusted. Thus, Asakawa fails to teach that both the image and paper timing are adjusted when length of the lead edge blank border, in the first dimension, exceeds a predetermined distance.

Therefore, contrary to the Examiner's assertion, Asakawa fails to disclose or suggest inspecting the data to determine **the lead edge blank border of the image wherein the lead edge blank border is a portion of the electronic data of the image corresponding to an area located at a leading edge of the recording medium onto which no marking material is to be deposited**, as set forth by independent claim 1.

Moreover, Asakawa fails to disclose or suggest determining, on a page by page basis, whether a length of the lead edge blank border, in the first dimension, exceeds a predetermined distance.

Finally, Asakawa fails to disclose or suggest adjusting, on a page by page basis, **imaging and paper delivery timing** accordingly to increase subsequent printing speed when length of the lead edge blank border, in the first dimension, exceeds a predetermined distance, as set forth by independent claim 1.

Dependent claims 2 and 3

With respect to dependent claims 2 and 3, the Applicant, for the sake of brevity, will not address the reasons supporting patentability for these individual dependent claims, as these claims depend directly from allowable independent claim 1. The Applicant reserves the right to address the patentability of these dependent claims at a later time, should it be necessary.

Accordingly, in view of remarks set forth above, the Examiner is respectfully requested to reconsider and withdraw the rejection under 35 U.S.C. §103.

Entry of Amendments under 37 C.F.R. 1.116

The Examiner is respectfully requested to enter the above amendments under 37 C.F.R. 1.116 for the following reasons.

The Examiner is respectfully requested to enter the above amendments under 37 C.F.R. 1.116 because the amendments place the application in condition for allowance and materially reduce and simplify the issues, thereby placing the application in better condition for Appeal. The Examiner is also respectfully requested to enter the above amendments under 37 C.F.R. 1.116 because the amendments do not require any further consideration and/or search and do not raise the issue of new matter. Accordingly, entry of these amendments under 37 C.F.R. 1.116 is proper.

CONCLUSION

Accordingly, in view of all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the present rejection. Also, an early indication of allowability is earnestly solicited.

Respectfully submitted,



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